

CLAIMS

1. A cooling system for a work machine, the cooling system comprising:

a cooling package including a heat exchanger unit and a cooling fan;

an upper cover disposed above the cooling package;

a side cover disposed at one side of the upper cover and facing the cooling package;

upper air intake holes that are formed in the upper cover so as to open to a space between the side cover and the cooling package;

side air intake holes formed in an upper part of the side cover, at a location adjacent to the upper cover; and

a sound insulating/flow regulating plate that is capable of moving between the upper air intake holes and the side air intake holes and serves to block sound generated inside the work machine and regulate flows of air introduced from the upper air intake holes and the side air intake holes.

2. A cooling system for a work machine as claimed in claim 1, wherein:

the cooling system includes a swing shaft means disposed between the upper air intake holes and the side air intake holes; and

the sound insulating/flow regulating plate is swingably supported by the swing shaft means.

3. A cooling system for a work machine as claimed in claim 1 or claim 2, wherein the cooling system includes:

hinges for attaching a base edge of the sound insulating/flow regulating plate to an underside of the upper cover; and

a locking means for securing a distal edge of the sound insulating/flow regulating plate to the underside of the upper cover when the sound insulating/flow regulating plate is in a folded state.

4. A cooling system for a work machine as claimed in any one of the claims from claim 1 to claim 3, wherein:

the cooling system includes a plurality of sound insulating/flow regulating plates.

5. A cooling system for a work machine as claimed in claim 1 or claim 2, wherein:

the side cover is a side door that can be opened outwards and back; and

the sound insulating/flow regulating plate is attached to the side door.

6. A cooling system for a work machine as claimed in any one of the claims from claim 1 to claim 5, wherein the cooling system includes:

an actuator for operating the sound insulating/flow regulating plate;

temperature sensors for detecting temperature data of the cooling package, and

a control means for controlling an angle of the sound insulating/flow regulating plate by controlling the actuator based on temperature data from the temperature sensors.

7. A cooling system for a work machine as claimed in any one of the claims from claim 1 to claim 6, wherein:

the heat exchanger unit of the cooling package comprises a plurality of devices selected from among a heat exchanger of a radiator serving to cool cooling water for an engine, a heat exchanger of an oil cooler serving to cool hydraulic fluid in a hydraulic circuit, a condenser of an air conditioner circuit, and a heat exchanger of an

aftercooler serving to cool engine intake air compressed by a turbo supercharger; and

the sound insulating/flow regulating plate is adapted so that a position of the sound insulating/flow regulating plate is adjustable to accommodate a combination structure of the selected devices and the cooling fan.